

WHAT IS CLAIMED IS:

1. A hub unit for a driving wheel, in which:  
one track ring out of a stationary ring and a  
rotary ring is an outer ring having a plurality of  
5 outer ring tracks on the inner peripheral surface  
thereof;

the other track ring of the stationary ring and  
the rotary ring is an inner ring assembly comprising  
a shaft member and an inner ring as a separate body  
10 combined with each other and having a plurality of  
inner ring tracks on the outer peripheral surface  
thereof;

the shaft member is formed with one of the inner  
ring tracks in a middle part in the axial direction  
15 thereof and a small-diameter step portion having a  
smaller diameter than that of the inner ring track  
portion at an end portion in the axial direction  
thereof; and

said separate inner ring has the other of the  
20 inner ring tracks on the outer peripheral surface  
thereof and is fitted on said small-diameter step  
portion,

which hub unit comprising:

a sensor holder fixed to the stationary ring of  
25 the hub unit for a driving wheel;

a sensor supported by said sensor holder and  
facing an encoder fixed to said rotary ring to rotate

together with said rotary ring; and

a harness or connector extended out of said sensor for taking out a detection signal of the sensor,

5           wherein:

the sensor unit includes said sensor and said harness or connector;

all of the portions of said sensor unit provided which are outside the outer ring in the axial  
10       direction and inside a range of a hub unit mounting hole of a knuckle are disposed on the inner side in the radial direction than an inner wall of the hub unit mounting hole of the knuckle;

said harness or connector is disposed on the  
15       outer side in the radial direction in a non-contact manner with a constant velocity universal joint in a finished car;

said sensor is an active sensor;

a sensing portion of said sensor directly faces  
20       said encoder without interposition between it and said encoder; and

said harness or connector is extended out of a gap between said knuckle and said constant velocity universal joint.

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2. A hub unit for a driving wheel according to claim 1, wherein a gap between the sensor or the

sensor holder and a rotary member constituted by at least an end surface of the inner ring, the outer diameter thereof, or the constant velocity universal joint is set to be not less than 0.1 mm and to be  
5 smaller than a gap between said constant velocity universal joint and said knuckle.

3. A hub unit for a driving wheel, in which:  
one track ring out of a stationary ring and a  
10 rotary ring is an outer ring having a plurality of outer ring tracks on the inner peripheral surface thereof;

the other track ring of the stationary ring and the rotary ring is an inner ring assembly comprising  
15 a shaft member and an inner ring as a separate body combined with each other and a plurality of inner ring tracks on the outer peripheral surface thereof;

the shaft member is formed with one of the inner ring tracks in a middle portion in the axial  
20 direction thereof and a small-diameter step portion having a smaller diameter than that of the inner ring track portion at an end portion in the axial direction thereof; and

said separate inner ring has the other of the  
25 inner ring tracks on the outer peripheral surface thereof and is fitted on said small-diameter step portion,

which hub unit comprising:

a sensor holder fixed to the stationary ring of the hub unit for a driving wheel;

a sensor supported by said sensor holder and  
5 facing an encoder fixed to said rotary ring to rotate together with said rotary ring;

a harness or connector extended out of said sensor for taking out a detection signal of the sensor; and

10 a sensor unit including said sensor and said harness or connector,

wherein:

said sensor is an active sensor; and

an internal circuit of said sensor is placed  
15 circumferentially or in an arc inside a cap.

4. A hub unit for a driving wheel, in which:

one track ring out of a stationary ring and a rotary ring is an outer ring having a plurality of  
20 outer ring tracks on the inner peripheral surface thereof;

the other track ring out of the stationary ring and the rotary ring is an inner ring assembly comprising a shaft member and an inner ring as a  
25 separate body combined with each other and a plurality of inner ring tracks on the outer peripheral surface thereof;

the shaft member is formed with one of the inner ring tracks in a middle portion in the axial direction thereof and a small-diameter step portion having a smaller diameter than that of the inner ring track portion at an end portion in the axial direction thereof; and

said separate inner ring has the other of the inner ring tracks on the outer peripheral surface thereof and is fitted on said small-diameter step portion,

which hub unit comprising:

a sensor holder fixed to the stationary ring of the hub unit for a driving wheel;

a sensor supported by said sensor holder and facing an encoder fixed to said rotary ring to rotate together with said rotary ring;

a harness or connector extended out of said sensor for taking out a detection signal of the sensor; and

a sensor unit including said sensor and said harness or connector,

wherein:

said sensor is an active sensor; and

the harness or connector of said sensor is taken out through an axial groove formed on the knuckle.

5. A hub unit for a driving wheel, in which:

one track ring out of a stationary ring and a rotary ring is an outer ring having a plurality of outer ring tracks on the inner peripheral surface thereof;

5           the other track ring of the stationary ring and the rotary ring is an inner ring assembly comprising a shaft member and an inner ring as a separate body combined with each other and a plurality of inner ring tracks on the outer peripheral surface thereof;

10           the shaft member is formed with one of the inner ring tracks in a middle portion in the axial direction thereof and a small-diameter step portion having a smaller diameter than that of the inner ring track portion at an end portion in the axial  
15           direction thereof; and

          said separate inner ring has the other of the inner ring tracks on the outer peripheral surface thereof and is fitted on said small-diameter step portion,

20           which hub unit comprising:

          a sensor holder fixed to the stationary ring of the hub unit for a driving wheel;

          a sensor supported by said sensor holder and facing an encoder fixed to said rotary ring to rotate  
25           together with said rotary ring;

          a harness or connector extended out of said sensor for taking out a detection signal of the

sensor; and

a sensor unit containing said sensor and said harness or connector,

wherein:

5       said sensor is an active sensor.

6. A hub unit for a driving wheel according to claim 5, wherein said sensor is formed with said sensor holder to be fixed thereto by resin molding as  
10 a unitary structure.

7. A hub unit for a driving wheel according to claim 5, wherein said sensor is press-fitted and fixed to said sensor holder as a unitary structure.  
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8. A hub unit for a driving wheel according to claim 5, wherein an outlet hole for discharging water is provided in a lower portion of said sensor holder.

20       9. A hub unit for a driving wheel according to claim 5, wherein an IC terminal is bent in said sensor.

10. A hub unit for a driving wheel according to  
25 claim 5, wherein said sensor and said sensor holder can be brought into ratchet fitting to be fixed to each other.